Recommendations from the X-FEL Power Coupler meeting.

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It is agreed that the TTF-III coupler, in its present form, meets all the requirements of the X-FEL parameters. However, improved statistics on coupler processing times are needed. Nevertheless, the observation of 20 hour conditioning on one coupler is a proof of existence that the coupler can be conditioned in a reasonable period of time.

The infra-structure which now exists at Orsay will allow new data to be obtained on coupler conditioning times. This use of this infra-structure provides us with a perfect opportunity to address this issue.

Detailed conditioning studies will be performed using some of the 30 couplers from CPI and/or some of the 10 couplers from ACCEL.

We recommend that the industrialisation studies, aimed at reducing costs for large series production, should be launched. These studies should include a review of the demanding technical specifications, especially regarding tolerances, which are presently required.

The principle of varying the coupler to cavity coupling by changing the penetration depth of the antenna is retained.

We recommend the development of a proto-type “in-situ” bake-out system as proposed during the meeting. The proposed system should have only a minor impact on the cryomodule design.

We agree that modifications to the module and cavity input flange should be avoided. Should a modification of the cavity flange be necessary for other reasons it should have no consequences for the RF coupler design.